

ARTIFICIAL INTELLIGENCE AND THE TRANSFORMATION OF THE ACCOUNTING PROFESSION: A SYSTEMATIC LITERATURE REVIEW OF OPPORTUNITIES, CHALLENGES, AND FUTURE IMPLICATIONS

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Abstract

Artificial Intelligence (AI) has significantly transformed accounting practices and the accounting profession through technologies such as Machine Learning (ML), Robotic Process Automation (RPA), Natural Language Processing (NLP), Big Data Analytics, and blockchain. While AI improves efficiency, automation, financial reporting, auditing, and decision-making, it also introduces challenges related to ethical governance, cybersecurity, algorithmic bias, technological dependency, and workforce transformation. This study aims to examine the impact of AI on accounting practices and the accounting profession using a Systematic Literature Review (SLR) approach. Following the PRISMA framework, 31 peer-reviewed studies published between 2022 and 2026 were selected and analyzed using thematic analysis. The findings indicate that AI enhances operational efficiency, audit quality, fraud detection, real-time financial reporting, and strategic decision-making. Furthermore, AI reshapes accountants' roles from routine administrative functions toward more analytical, strategic, and advisory responsibilities, increasing the need for digital competencies, AI literacy, and ethical awareness. This study contributes to the accounting literature by providing an integrated synthesis of the opportunities, challenges, and future implications of AI adoption. It also highlights the importance of continuous professional development, technology-oriented accounting education, and ethical governance to support sustainable AI implementation in the accounting profession.

Keywords: accounting profession, artificial intelligence, digital transformation, accounting information systems, systematic literature review

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1. Introduction

The rapid advancement of digital technology has significantly transformed business activities across various sectors, including accounting and financial management (Vial, 2019). The emergence of advanced Artificial Intelligence (AI), particularly following the rapid development of generative AI technologies since 2022, has accelerated digital transformation across organizations worldwide. Increasingly, organizations are integrating AI into financial reporting, auditing, taxation, and decision-support systems to improve operational efficiency, analytical capability, and real-time decision-making. Artificial Intelligence (AI) refers to computer systems capable of performing tasks that typically require human intelligence, including learning, reasoning, problem-solving, and decision-making (Russell & Norvig, 2020). Driven by increasing demands for automation, operational efficiency, accuracy, and real-time data processing, AI has become a key enabler of digital transformation within modern organizations (Davenport & Ronanki, 2018). In the accounting sector, AI has increasingly supported financial reporting, auditing, and managerial decision-making processes, thereby enhancing organizational effectiveness (Abdo-Salloum & Chehade, 2026).

The implementation of AI in accounting practices involves various technologies, including Machine Learning (ML), Robotic Process Automation (RPA), Natural Language Processing (NLP), Big Data Analytics, and blockchain integration (Martaseli & Maragita, 2023). These technologies enable organizations to automate repetitive accounting tasks such as bookkeeping, transaction recording, reconciliation, auditing, fraud detection, and financial statement preparation (Bakumenko & Elragal, 2022). AI integration within Accounting Information Systems (AIS) also enhances operational efficiency, reduces human error, and supports predictive as well as real-time financial analysis (Nainggolan, 2024). Consequently, organizations increasingly adopt AI-based accounting systems to improve competitiveness, organizational performance, and strategic decision-making capabilities in the digital era (Abdullah & Almaqtari, 2024).

In addition to operational benefits, AI technologies also contribute to improving audit quality, fraud detection effectiveness, financial transparency, and predictive financial analysis. AI enables organizations to process large volumes of financial data more quickly and accurately compared to traditional accounting systems (Leocádio et al., 2024). Furthermore, AI-based systems

support intelligent forecasting and analytical processes that assist management in making strategic business decisions. As digital transformation continues to evolve, AI is increasingly recognized as a critical driver of innovation and organizational sustainability in accounting and finance (Alshahrani & Hakim, 2026).

Recent reports from international professional organizations demonstrate that AI adoption has become a global trend in the accounting profession. The Association of Chartered Certified Accountants (ACCA) reports that AI technologies are increasingly integrated into financial reporting, audit analytics, tax compliance, and advisory services, fundamentally reshaping accountants' daily responsibilities and shifting their roles from routine transaction processing toward more strategic, analytical, and value-creating functions (ACCA, 2023). Similarly, the International Federation of Accountants (IFAC) emphasizes that future accountants are expected to possess competencies beyond traditional accounting knowledge, including AI literacy, data analytics, digital ethics, and strategic decision-making capabilities to remain professionally relevant in technology-driven business environments (IFAC, 2022). These developments indicate that AI adoption is no longer limited to improving operational efficiency but has become a catalyst for transforming accountants' competencies, professional roles, and accounting education in the digital era.

Despite its significant advantages, the implementation of AI in accounting also creates various challenges and concerns. One of the primary concerns is the potential reduction of traditional accounting jobs due to automation technologies replacing repetitive human tasks (Bavaresco et al., 2023). In addition, AI adoption raises important issues related to cybersecurity risks, data privacy, ethical concerns, algorithmic bias, technological dependency, and accountability in decision-making processes (Lehner et al., 2022). These challenges require accountants to develop new competencies in digital technology, data analytics, critical thinking, and strategic management to remain relevant in increasingly technology-driven business environments (Howieson et al., 2021). Therefore, the transformation of the accounting profession has become a major issue in the era of digital disruption and AI development.

Several previous studies have extensively discussed the role of Artificial Intelligence (AI) in accounting systems and the accounting profession. Existing literature shows that AI significantly improves efficiency, accuracy, and automation in accounting activities through intelligent data processing and

advanced analytical capabilities (Al Fatya & Susilowati, 2025; Doshi, 2025; Olayemi et al., 2025). AI integration has also been found to enhance the effectiveness of Accounting Information Systems (AIS), support real-time financial reporting, improve fraud detection, and strengthen organizational decision-making processes (Fauzi, 2026; Makwana, 2025; Odonkor et al., 2024). Furthermore, several studies highlighted that AI technologies transform the traditional role of accountants by automating repetitive tasks and shifting professional responsibilities toward more strategic, analytical, and advisory functions (Bako & Tanko, 2022; Januszewski & Pietrysiak, 2025). AI implementation also contributes to predictive financial analysis, auditing effectiveness, transparency, and financial reporting quality improvement (Akinadewo et al., 2024; Kureljusic & Karger, 2024; Peng et al., 2023).

However, despite the growing body of literature, most previous studies mainly focused on the operational, technical, and efficiency-related benefits of AI implementation in accounting systems (Al Fatya & Susilowati, 2025; Odonkor et al., 2024; Olayemi et al., 2025). Limited studies comprehensively examine broader issues such as ethical challenges, algorithmic bias, cybersecurity risks, digital competencies, transformation of accountants' professional roles, accounting education, and the long-term implications of AI adoption for the accounting profession (Fülöp et al., 2023; Schweitzer, 2024; Tavares et al., 2023). In addition, many existing studies remain conceptual or literature-based and lack empirical integration regarding both the opportunities and risks associated with AI adoption across accounting practices and professional environments (Abbas, 2026; Doshi, 2025; Peng et al., 2023). Therefore, a more comprehensive literature review is necessary to provide an integrated understanding of how AI influences accounting systems, professional competencies, ethical considerations, and the future sustainability of the accounting profession in the digital era. This study differs from previous studies because it integrates discussions regarding efficiency, ethical challenges, digital competencies, accounting education, and future professional implications within a single SLR framework.

Moreover, previous studies have reported varying perspectives regarding the broader implications of AI adoption in accounting. While several studies conclude that AI primarily enhances efficiency by automating repetitive accounting tasks and improving financial reporting quality (Al Fatya & Susilowati, 2025; Olayemi et al., 2025), others argue that AI fundamentally transforms accountants' professional roles by shifting their responsibilities

toward strategic advisory and decision-support functions (Bako & Tanko, 2022; Januszewski & Pietrysiak, 2025). Conversely, another stream of research highlights ethical concerns, including algorithmic bias, data privacy, transparency, and cybersecurity, which may limit the sustainable implementation of AI in accounting practices (Fülöp et al., 2023; Schweitzer, 2024). These differing perspectives indicate that the current literature remains fragmented and lacks an integrated synthesis that simultaneously considers technological, professional, educational, and ethical dimensions.

Artificial Intelligence (AI) in accounting has been widely discussed in previous literature reviews. However, most existing reviews primarily focus on specific aspects of AI adoption, such as automation, auditing technologies, financial reporting efficiency, or technological implementation within Accounting Information Systems (AIS) (Abdo-Salloum & Chehade, 2026; Kureljusic & Karger, 2024). Relatively limited attention has been given to integrating technical, professional, educational, ethical, and future-oriented perspectives within a single analytical framework. Consequently, the broader implications of AI for the transformation of the accounting profession remain fragmented across the existing literature.

Accordingly, this study offers three primary contributions to the existing literature. First, unlike previous Systematic Literature Reviews, this study synthesizes AI adoption in accounting through five interconnected dimensions comprising efficiency and automation, transformation of the accounting profession, ethical challenges and risks, digital competencies and accounting education, and future opportunities and implications. Second, this review specifically focuses on literature published between 2022 and 2026, capturing the emergence of generative AI technologies, increasing organizational AI adoption, and evolving discussions regarding governance and professional transformation that were not fully reflected in earlier reviews. This period also coincides with the widespread commercialization of generative AI, creating a substantial shift in accounting research priorities compared with studies published before 2022. Third, this study develops an integrated thematic synthesis that explains the relationships among technological innovation, professional transformation, ethical governance, competency development, and the future of accounting practice within a single conceptual framework.

Academically, this study contributes in three important ways. First, it extends the Accounting Information Systems literature by explaining AI

adoption beyond system efficiency toward organizational and professional transformation. Second, it enriches the digital accounting literature through an integrated synthesis of technological innovation, ethical governance, competency development, and accounting education. Third, it contributes to the accounting profession literature by proposing a comprehensive conceptual understanding of how AI reshapes accountants' competencies, strategic roles, and future professional sustainability.

Considering these research gaps and the rapid evolution of Artificial Intelligence technologies, an updated Systematic Literature Review is necessary to consolidate current knowledge, identify emerging research trends, and provide a comprehensive understanding of AI-driven transformation within the accounting profession.

Based on these issues, this study aims to analyze the impact of Artificial Intelligence on accounting practices and the accounting profession through a Systematic Literature Review (SLR) approach. This study addresses the following research questions: (1) How does Artificial Intelligence improve efficiency and automation in accounting practices? (2) How does AI transform the roles and responsibilities of accountants in the digital era? (3) What ethical challenges and risks arise from AI adoption in accounting? (4) How do digital competencies and accounting education support AI implementation in the accounting profession? and (5) What are the future opportunities and implications of AI adoption in accounting practices?.

Sociotechnical Systems Theory

Sociotechnical Systems Theory (STS) was originally introduced by Trist and Bamforth (1951) to explain that organizational performance is determined by the interaction between two interdependent subsystems: the technical subsystem, which includes technology, work processes, and organizational infrastructure, and the social subsystem, which comprises people, organizational culture, communication, leadership, and professional competencies. The theory argues that technological innovation alone cannot guarantee organizational effectiveness unless it is accompanied by appropriate adaptation of human capabilities and organizational structures. Bostrom and Heinen (1977) further extended STS to the field of information systems by emphasizing that the successful implementation of information technology depends on the alignment between technological systems and social factors such as work design,

managerial support, and user competencies. Therefore, STS provides a comprehensive theoretical perspective for understanding how technological innovation influences organizational change through the interaction between technology and human elements rather than through technology alone.

In the context of Artificial Intelligence (AI) adoption in accounting, Sociotechnical Systems Theory provides the primary theoretical foundation for explaining the transformation of the accounting profession. AI technologies, including Machine Learning, Robotic Process Automation (RPA), Natural Language Processing (NLP), and predictive analytics, represent the technical subsystem that enhances automation, financial reporting, auditing, and decision-making processes. However, the effectiveness of AI implementation also depends on the social subsystem, including accountants' digital competencies, ethical awareness, professional judgment, organizational culture, and governance mechanisms. Consequently, AI adoption should be viewed as a sociotechnical transformation that reshapes not only accounting technologies but also accountants' roles, required competencies, accounting education, and organizational practices. Guided by this theoretical perspective, this Systematic Literature Review synthesizes the existing literature into five interconnected themes comprising efficiency and automation, transformation of the accounting profession, ethical challenges and risks, digital competencies and accounting education, and future opportunities and implications.

Artificial Intelligence (AI)

Artificial Intelligence (AI) refers to computer systems capable of performing tasks that generally require human intelligence, including learning, reasoning, problem-solving, and decision-making (Russell & Norvig, 2020). The rapid advancement of AI has been driven by developments in machine learning, big data analytics, cloud computing, and automation technologies, which have significantly transformed business operations across various sectors, including accounting and finance (Davenport & Ronanki, 2018). In accounting practices, AI technologies such as Machine Learning (ML), Robotic Process Automation (RPA), Natural Language Processing (NLP), and predictive analytics are increasingly used to automate repetitive accounting tasks and improve operational efficiency (Martaseli & Maragita, 2023).

AI enables organizations to process large volumes of financial data quickly and accurately while reducing human error and operational costs (Nainggolan,

2024). Furthermore, AI-based systems support real-time financial reporting, predictive analysis, and intelligent decision-making processes that improve organizational performance and competitiveness in the digital era (Abdullah & Almaqtari, 2024). Therefore, AI has become an important component of digital transformation and accounting system modernization in modern organizations.

Accounting Information Systems (AIS)

Accounting Information Systems (AIS) are integrated systems designed to collect, process, store, and communicate financial information to support planning, control, and organizational decision-making processes (Romney & Steinbart, 2018). AIS plays a crucial role in ensuring the accuracy, reliability, and relevance of accounting information used by both internal and external stakeholders. The development of information technology has significantly improved the effectiveness and efficiency of AIS implementation within organizations (Hall, 2019).

The integration of AI into AIS further strengthens organizational capabilities in managing large financial datasets, detecting anomalies, and supporting predictive financial analysis (Leocádio et al., 2024). AI-based AIS enables organizations to generate real-time financial reports, improve fraud detection mechanisms, and reduce manual processing errors through intelligent automation and data analysis (Monteiro et al., 2023). Consequently, AI-supported AIS contributes to better operational efficiency, financial transparency, and strategic decision-making in modern business environments.

AI Implementation in Accounting

The implementation of Artificial Intelligence in accounting has significantly transformed traditional accounting processes and professional practices. AI technologies are increasingly utilized to automate routine accounting activities such as bookkeeping, transaction recording, reconciliation, invoice processing, auditing, tax reporting, and financial statement preparation (Bakumenko & Elragal, 2022). The adoption of AI improves operational efficiency by minimizing manual workloads, reducing human errors, and accelerating financial data processing activities (Nainggolan, 2024).

In addition, AI implementation supports predictive financial analysis, fraud detection, and intelligent forecasting processes that assist organizations in making strategic business decisions (Alshahrani & Hakim, 2026). Machine

learning algorithms can analyze historical financial data to identify financial risks and detect unusual transaction patterns more effectively than traditional accounting systems (Leocádio et al., 2024). Therefore, AI implementation not only enhances accounting efficiency but also supports the development of more adaptive, intelligent, and data-driven accounting systems.

Transformation of the Accounting Profession

The rapid adoption of Artificial Intelligence has transformed the accounting profession from traditional administrative functions toward more strategic, analytical, and technology-oriented roles. By automating routine tasks, AI enables accountants to focus on business advisory, strategic analysis, and decision-making (Bako & Tanko, 2022). As a result, accountants are increasingly expected to possess broader competencies, including digital literacy, data analytics, critical thinking, communication skills, and technological adaptability (Howieson et al., 2021).

Despite the increasing use of automation, human involvement remains essential in accounting practices. Ethical judgment, professional skepticism, strategic thinking, and decision-making responsibilities cannot be fully replaced by AI systems (Lehner et al., 2022). Therefore, the future accounting profession is expected to involve greater collaboration between accountants and intelligent technologies. Educational institutions and professional organizations also play an important role in preparing future accountants through continuous professional development and technology-oriented learning systems.

Challenges of AI Adoption in Accounting

Despite its significant benefits, AI adoption in accounting also creates various ethical, technological, and organizational challenges. One of the primary concerns is the potential reduction of traditional accounting jobs due to automation technologies replacing repetitive human tasks (Bavaresco et al., 2023). In addition, AI implementation raises important issues related to cybersecurity risks, data privacy, algorithmic bias, technological dependency, and accountability in decision-making processes (Lehner et al., 2022). These challenges may affect the reliability, transparency, and fairness of accounting and auditing activities.

The literature also indicates that many accounting professionals still face difficulties adapting to rapid technological changes because of limited digital

competencies, inadequate training, and organizational resistance to innovation (Howieson et al., 2021). Therefore, continuous professional development, technology-based education, and organizational support are necessary to facilitate successful AI implementation in accounting practices. Furthermore, ethical governance and regulatory frameworks are needed to ensure responsible AI adoption and maintain the balance between technological innovation and human professional judgment in the accounting profession.

Research Gap and Literature Synthesis

Research on Artificial Intelligence (AI) in accounting has expanded rapidly over the last decade, reflecting the increasing digitalization of accounting practices and business processes. Early studies primarily focused on the application of AI technologies to improve operational efficiency through the automation of bookkeeping, transaction processing, financial reporting, and auditing activities. More recent studies have broadened their scope by examining AI-assisted decision-making, fraud detection, predictive analytics, and intelligent Accounting Information Systems (AIS), demonstrating that AI has become an important driver of digital transformation within the accounting profession (Bakumenko & Elragal, 2022; Odonkor et al., 2024; Kureljusic & Karger, 2024). Following the emergence of generative AI technologies since 2022, research attention has increasingly shifted toward broader organizational issues, including ethical governance, digital competencies, professional transformation, and the future role of accountants in technology-driven environments.

Despite this growing body of literature, previous studies present differing perspectives regarding the implications of AI adoption for the accounting profession. Several studies argue that AI primarily improves organizational efficiency by automating repetitive accounting tasks, increasing reporting accuracy, and enhancing audit quality (Al Fatya & Susilowati, 2025; Olayemi et al., 2025). In contrast, other researchers suggest that the most significant impact of AI lies in transforming accountants' professional roles from routine transaction processing toward strategic advisory, analytical, and decision-support functions (Bako & Tanko, 2022; Januszewski & Pietrysiak, 2025). Meanwhile, another stream of research emphasizes that rapid AI adoption introduces new challenges related to algorithmic bias, data privacy, cybersecurity, transparency, accountability, and professional ethics, potentially limiting the sustainable implementation of AI if appropriate governance mechanisms are not established (Fülöp et al., 2023; Schweitzer, 2024). These varying perspectives indicate that the

current literature remains fragmented, with different studies emphasizing different dimensions of AI adoption rather than providing an integrated understanding of its overall impact on the accounting profession.

Furthermore, previous literature reviews generally concentrate on specific aspects of AI implementation, such as accounting automation, auditing technologies, financial reporting, or Accounting Information Systems (AIS), while relatively limited attention has been devoted to synthesizing technological, professional, ethical, educational, and future-oriented dimensions within a single analytical framework (Abdo-Salloum & Chehade, 2026; Kureljusic & Karger, 2024). As a result, important relationships among technological innovation, accountants' competency development, ethical governance, accounting education, and future professional transformation remain insufficiently explored. This fragmentation creates a research gap that limits a comprehensive understanding of how AI simultaneously reshapes accounting systems, organizational practices, and professional competencies.

Accordingly, this study addresses these gaps by conducting an updated Systematic Literature Review of studies published between 2022 and 2026, a period characterized by the rapid emergence of generative AI, increasing organizational AI adoption, and evolving discussions regarding governance, ethics, and professional transformation. Unlike previous reviews, this study develops an integrated thematic synthesis consisting of five interconnected themes: (1) efficiency and automation, (2) transformation of the accounting profession, (3) ethical challenges and risks, (4) digital competencies and accounting education, and (5) future opportunities and implications. Through this integrated perspective, the study contributes to the Accounting Information Systems and digital accounting literature by providing a comprehensive conceptual framework that explains how technological innovation and social adaptation collectively shape the future development of the accounting profession.

2. Research Method

This study employed a qualitative research approach using the Systematic Literature Review (SLR) method to analyze the impact of Artificial Intelligence (AI) on accounting practices and the transformation of the accounting profession in the digital era. The SLR approach was selected because it enables researchers

to systematically identify, critically evaluate, and synthesize evidence from previous studies related to AI implementation in accounting and Accounting Information Systems (AIS). By following a structured review process, this study seeks to provide a comprehensive understanding of the opportunities, challenges, and future implications of AI adoption within the accounting profession.

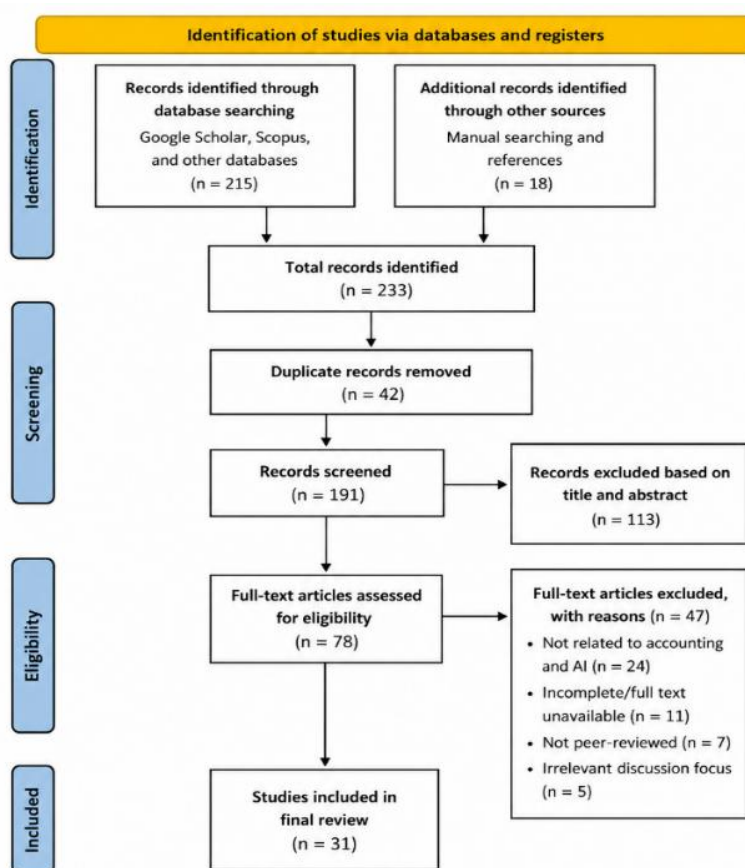
The data used in this study consisted of secondary sources obtained from peer-reviewed journal articles, conference proceedings, books, and professional reports discussing Artificial Intelligence, Accounting Information Systems, digital transformation, auditing, and the accounting profession. Literature was collected from several academic databases, including Scopus, ScienceDirect, Google Scholar, and other relevant scholarly publication platforms to maximize literature coverage and reduce publication bias. The primary review focused on empirical and contemporary studies published between 2022 and 2026, reflecting the rapid development of generative AI and its applications in accounting. Nevertheless, seminal studies published before 2022 were retained whenever necessary to support theoretical foundations and conceptual explanations.

The literature search was conducted between April and May 2026 using predefined search strings adapted to the characteristics of each database. Boolean operators (AND and OR) were employed to improve search accuracy and ensure comprehensive retrieval of relevant studies. The primary search string was: ("Artificial Intelligence" OR AI OR "Machine Learning" OR "Generative AI") AND ("Accounting" OR "Accounting Information Systems" OR Auditing OR "Financial Reporting" OR "Accounting Profession"). Additional search terms, including Digital Accounting, Robotic Process Automation (RPA), Accounting Education, Data Analytics, and Digital Transformation, were incorporated when appropriate to capture emerging studies related to AI adoption in accounting.

A total of 233 records were initially identified from four major literature sources. Of these, 98 records were retrieved from Scopus, 61 from ScienceDirect, 48 from Google Scholar, and 26 from other scholarly sources. In addition, manual backward reference searching was conducted to identify relevant studies that were not captured through database searching. The use of multiple databases was intended to increase the comprehensiveness of the review and minimize the possibility of overlooking relevant publications.

The literature selection process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, consisting of four stages: identification, screening, eligibility assessment, and inclusion. Initially, 233 records were identified through database searches and manual reference tracking. After removing 42 duplicate records, 191 studies remained for title and abstract screening. Subsequently, 78 full-text articles were assessed for eligibility based on the predefined inclusion and exclusion criteria. Following the eligibility assessment, 31 articles met all selection criteria and were included in the final synthesis. The PRISMA framework was adopted to ensure transparency, consistency, and replicability throughout the literature selection process. The complete literature selection procedure is illustrated in Figure 1.

Figure 1. PRISMA Flow Diagram



The final number of included studies was considered adequate because the review prioritized relevance, methodological quality, and direct discussion of AI implementation within accounting contexts rather than broader digital transformation topics.

The inclusion criteria comprised: (1) studies examining Artificial Intelligence implementation in accounting, auditing, or Accounting Information Systems; (2) articles published in peer-reviewed journals or conference proceedings; (3) publications written in English or Indonesian; and (4) studies published between 2022 and 2026. Conversely, studies unrelated to AI in accounting, duplicate publications, incomplete full-text articles, editorials, book reviews, and non-scientific publications were excluded from the review.

To enhance methodological rigor, a quality assessment was performed before the thematic synthesis. Each selected article was evaluated using five criteria: (1) relevance to the research objectives, (2) methodological transparency, (3) publication credibility, (4) clarity and completeness of findings, and (5) contribution to the understanding of AI implementation in accounting. Articles that adequately fulfilled these quality criteria were retained for analysis, whereas studies with insufficient methodological information or limited relevance were excluded.

The selected studies were analyzed using thematic analysis, which allows recurring concepts, patterns, and relationships across the literature to be systematically identified and synthesized. The coding procedure consisted of five stages: (1) familiarization through repeated reading of the selected articles; (2) extraction of key findings related to AI implementation in accounting; (3) generation of initial codes; (4) categorization of similar codes into broader conceptual groups; and (5) development of overarching themes.

For instance, studies discussing automated bookkeeping, transaction processing, financial reporting, and reconciliation were initially coded under automation, whereas studies emphasizing fraud detection, anomaly identification, continuous auditing, and audit analytics were grouped under audit analytics. These initial codes were subsequently consolidated into broader thematic categories, including AI efficiency and automation, auditing and fraud detection, transformation of the accounting profession, ethical challenges and risks, digital competencies and accounting education, and future opportunities and implications.

To improve the credibility and trustworthiness of the thematic synthesis, the coding process was conducted iteratively by repeatedly comparing concepts across all selected studies. Themes were continuously refined through cross-checking and constant comparison to ensure conceptual consistency while

minimizing subjective interpretation. Whenever ambiguities arose during the categorization process, the relevant articles were re-examined until an appropriate thematic classification was established.

The selected literature was ultimately classified into six major themes: (1) AI efficiency and automation, (2) transformation of the accounting profession, (3) auditing and fraud detection, (4) ethical challenges and risks, (5) digital competencies and accounting education, and (6) future opportunities and implications of AI adoption. Since many studies addressed multiple aspects of AI implementation simultaneously, a single article could be assigned to more than one thematic category. The thematic mapping of the selected studies is presented in Table 1.

Table 1. Thematic Classification of Selected Studies

Theme	Main Topics	Articles Included	Number of Articles
AI Efficiency & Automation	automation, reporting, reconciliation, productivity, AIS efficiency	(Abbas, 2026; Akinadewo et al., 2024; Al Fatya & Susilowati, 2025; Al Wael et al., 2024; Bako & Tanko, 2022; Doshi, 2025; Gomaa, 2026; Kureljusic & Karger, 2024; Makwana, 2025; Odonkor et al., 2024; Olayemi et al., 2025; Peng et al., 2023; Sudarman, 2025; Zamain & Subramanian, 2024)	n = 14
Transformation of Accounting Profession	role change, advisory role, workforce transformation, job displacement	(Abbas, 2026; Bako & Tanko, 2022; Banța et al., 2022; Deliu & Olariu, 2024; Doshi, 2025; Fauzi, 2026; Grosu et al., 2023; Januszewski & Pietrysiak, 2025; Olayemi et al., 2025; Peng et al., 2023; Sabuncu, 2022; Sudarman, 2025; Zamain & Subramanian, 2024)	n = 13
Auditing & Fraud Detection	audit quality, anomaly detection, fraud prevention, audit automation	(Akinadewo et al., 2024; Bakumenko & Elragal, 2022; Gomaa, 2026; Han et al., 2023; Leocádio et al., 2024; Olayemi et al., 2025; Peng et al., 2023; Zamain & Subramanian, 2024)	n = 8
Ethical Challenges & Risks	privacy, bias, accountability, cybersecurity, governance	(Abbas, 2026; Banța et al., 2022; Deliu & Olariu, 2024; Doshi, 2025; Fülöp et al., 2023; Han et al., 2023; Lehner et al., 2022; Odonkor et al., 2024; Peng et al., 2023; Sabuncu, 2022; Schweitzer, 2024; Zamain & Subramanian, 2024)	n = 12
Digital Competencies & Accounting Education	curriculum, AI literacy, reskilling, upskilling	(Abbas, 2026; Alghafiqi & Munajat, 2022; Bako & Tanko, 2022; Fauzi, 2026; Grosu et al., 2023; Januszewski & Pietrysiak, 2025; Nusa et al., 2024; Sudarman, 2025; Tandiono, 2023; Tavares et al., 2023)	n = 10

Theme	Main Topics	Articles Included	Number of Articles
Future Opportunities & Implications	Industry 5.0/6.0, sustainability, governance, future roles	(Abbas, 2026; Bako & Tanko, 2022; Deliu & Olariu, 2024; Fauzi, 2026; Han et al., 2023; Makwana, 2025; Odonkor et al., 2024; Peng et al., 2023; Sudarman, 2025; Tavares et al., 2023)	n = 11

Note: The total frequency across themes exceeds the number of reviewed articles (n = 31) because several studies were classified into multiple thematic categories.

Finally, this study employed a descriptive analytical approach to interpret how AI influences accounting systems, organizational processes, professional responsibilities, and the competencies required of accountants in response to digital transformation. Through the SLR approach, this study provides an integrated synthesis of current evidence regarding the opportunities, challenges, and future implications of AI adoption in accounting, while contributing to the development of Accounting Information Systems, digital accounting, and accounting profession literature

3. Result and Discussion

Artificial Intelligence Improves Efficiency and Automation in Accounting

The reviewed literature consistently demonstrates that Artificial Intelligence (AI) has become a major driver of efficiency and automation in accounting practices. Technologies such as Machine Learning (ML), Robotic Process Automation (RPA), Natural Language Processing (NLP), and Big Data Analytics automate repetitive accounting activities, including bookkeeping, transaction processing, reconciliation, financial reporting, auditing, and fraud detection (Fauzi, 2026; Olayemi et al., 2025). Collectively, these technologies improve processing speed, reduce manual intervention, and enhance data accuracy.

Several studies indicate that AI significantly improves operational performance by enabling organizations to process large volumes of financial data more efficiently than traditional accounting systems. Olayemi et al. (2025) reported that AI streamlines routine accounting operations and reduces operational inefficiencies, while Al Fatya and Susilowati (2025) found that AI improves the speed and accuracy of financial reporting through intelligent data processing. Similarly, Makwana (2025) highlighted that AI supports real-

time financial reporting and predictive analytics, enabling organizations to generate more timely and reliable information for strategic decision-making.

The literature also highlights AI's contribution to auditing. AI-powered technologies, including data mining, anomaly detection, and image recognition, improve audit quality by enhancing evidence collection, analytical procedures, and fraud detection capabilities (Akinadewo et al., 2024; Gomaa, 2026). Rather than replacing auditors, these technologies strengthen audit effectiveness by enabling continuous monitoring and more comprehensive analysis of financial data.

Beyond improving operational efficiency, AI reduces administrative workloads and allows accountants to shift their attention from routine transactional activities toward analytical and strategic responsibilities (Bako & Tanko, 2022). This transformation suggests that AI not only automates accounting processes but also expands the role of accounting professionals in organizational decision-making.

Overall, the reviewed studies consistently indicate that AI has become a key enabler of digital transformation in accounting. By improving efficiency, reporting quality, auditing effectiveness, and analytical capability, AI supports the evolution of Accounting Information Systems toward more intelligent, data-driven, and strategically oriented accounting practices.

Transformation of the Accounting Profession

The reviewed literature consistently indicates that Artificial Intelligence (AI) is fundamentally transforming the accounting profession. Traditionally, accountants were primarily responsible for routine activities such as bookkeeping, transaction recording, reconciliation, and financial statement preparation. However, the increasing adoption of AI technologies has shifted the profession toward more analytical, strategic, and advisory-oriented roles (Abbas, 2026; Fauzi, 2026). Rather than replacing accountants, AI changes the nature of their work by automating repetitive tasks and enabling greater involvement in organizational decision-making.

Several studies suggest that AI allows accountants to focus on higher-value activities by reducing routine operational workloads. Fauzi (2026) argued that AI transforms accountants from transaction processors into strategic business advisors capable of supporting organizational governance

and managerial decision-making. Similarly, Bako and Tanko (2022) emphasized that although AI can automate many accounting functions, professional judgment, ethical reasoning, and strategic thinking remain uniquely human capabilities that cannot be fully replicated by intelligent systems. These findings indicate that AI complements rather than substitutes professional expertise.

The literature also highlights the increasing importance of analytical and technological competencies within the accounting profession. AI-powered forecasting and predictive analytics improve financial planning and organizational decision-making, requiring accountants to develop stronger capabilities in data analytics, critical thinking, and technology management (Kureljusic & Karger, 2024). Consequently, accountants are expected to move beyond traditional financial reporting roles and contribute more actively to business strategy, risk management, and organizational performance.

Beyond individual competencies, AI adoption also reshapes organizational structures and professional expectations. Abbas (2026) reported that digitalization changes management accounting workflows, organizational relationships, and decision-making processes, requiring accountants to collaborate effectively with intelligent systems while interpreting increasingly complex financial information. As AI becomes integrated into accounting operations, collaboration between human expertise and intelligent technologies emerges as a defining characteristic of the profession.

The reviewed studies further emphasize the necessity of continuous professional development to support this transformation. Accounting professionals must continuously update their technological competencies, digital literacy, and analytical capabilities to remain competitive in AI-driven business environments (Grosu et al., 2023; Sudarman, 2025). Overall, the literature suggests that the future of the accounting profession lies not in the replacement of accountants by AI, but in the evolution of accountants into technology-enabled professionals who combine accounting expertise with analytical, strategic, and ethical capabilities to create greater organizational value.

Ethical Challenges and Risks of AI Adoption

Although Artificial Intelligence (AI) offers substantial benefits for accounting efficiency and automation, the reviewed literature consistently highlights ethical, technological, and organizational challenges that accompany its implementation. The most frequently discussed concerns include data privacy, cybersecurity, algorithmic bias, lack of transparency, accountability, and technological dependency (Fülöp et al., 2023; Schweitzer, 2024). These challenges suggest that successful AI adoption depends not only on technological capability but also on effective governance and responsible implementation.

One of the primary concerns is the protection of financial data. AI-enabled accounting systems rely on extensive organizational and financial datasets, increasing exposure to unauthorized access, data breaches, and cyberattacks. Schweitzer (2024) emphasized that organizations should establish robust governance mechanisms and data protection policies, while Peng et al. (2023) argued that stronger cybersecurity infrastructure and ethical standards are essential to maintain the confidentiality and integrity of financial information. These findings indicate that data governance has become a critical component of AI-enabled accounting systems.

The literature also identifies algorithmic bias and limited transparency as significant challenges. AI systems may produce biased or unreliable outcomes when trained using incomplete or unrepresentative datasets, potentially affecting financial analysis, auditing, and managerial decision-making. Fülöp et al. (2023) reported that accounting professionals remain concerned about the fairness and explainability of AI-generated outputs, particularly when automated systems influence critical financial decisions. This highlights the need for greater transparency and accountability in AI-assisted decision-making processes.

Another recurring issue concerns excessive reliance on intelligent systems. Although AI improves efficiency and analytical accuracy, Han et al. (2023) warned that overdependence on automation may weaken professional skepticism, critical thinking, and human judgment. Similarly, the reviewed studies suggest that AI-driven automation may reduce demand for routine accounting positions while increasing uncertainty among professionals who lack adequate digital competencies (Deliu & Olariu, 2024; Sabuncu, 2022).

These findings reinforce the importance of continuous professional development to support workforce adaptation during digital transformation. (Han et al., 2023)

The literature further emphasizes that ethical governance and regulatory readiness are essential for the sustainable adoption of AI in accounting. Professional standards, regulatory frameworks, and organizational governance mechanisms should promote transparency, accountability, fairness, and responsible data management to ensure that AI is implemented ethically and consistently (Fülöp et al., 2023; Schweitzer, 2024).

Overall, the reviewed studies indicate that the long-term success of AI adoption depends not only on technological advancement but also on organizations' ability to address ethical risks, strengthen governance, protect sensitive financial data, and preserve human professional judgment. Consequently, responsible AI governance has become a fundamental requirement for achieving sustainable digital transformation in accounting.

Digital Competencies and Accounting Education

The reviewed literature indicates that the rapid adoption of Artificial Intelligence (AI) has substantially increased the importance of digital competencies within the accounting profession. Beyond traditional accounting knowledge, accountants are increasingly expected to develop AI literacy, data analytics capabilities, technological adaptability, and strategic thinking to remain relevant in digitally transformed organizations (Sudarman, 2025; Tavares et al., 2023). AI implementation therefore requires continuous reskilling and upskilling as accounting tasks become more technology-intensive.

These findings are consistent with Sociotechnical Systems Theory (STS), which argues that technological innovation can only create organizational value when accompanied by corresponding improvements in human competencies and organizational adaptation (Trist & Bamforth, 1951; Bostrom & Heinen, 1977). Within AI-enabled accounting environments, the technical subsystem consists of intelligent technologies, whereas the social subsystem comprises accountants' knowledge, digital skills, and learning capabilities. Consequently, the effectiveness of AI implementation depends not only on

technological sophistication but also on accountants' readiness to work alongside intelligent systems.

The literature further demonstrates that AI adoption has significant implications for accounting education. Several studies recommend redesigning accounting curricula by incorporating AI literacy, data analytics, digital accounting, and emerging technologies to prepare graduates for technology-driven professional environments (Nusa et al., 2024; Tandiono, 2023). Moreover, collaboration among universities, professional accounting bodies, and industry is considered essential to ensure that future accountants possess competencies aligned with evolving organizational needs (Tavares et al., 2023).

Beyond formal education, continuous professional development has become increasingly important. Januszewski and Pietrysiak (2025) found that many accounting professionals continue to face challenges related to technological adaptation, limited AI training, and organizational resistance to change. Therefore, lifelong learning initiatives and technology-oriented training programs are necessary to strengthen accountants' ability to utilize AI effectively while maintaining analytical reasoning, communication skills, and ethical judgment.

Overall, the reviewed studies suggest that digital competency development represents a fundamental prerequisite for sustainable AI adoption in accounting. Rather than replacing accountants, AI increases the demand for professionals capable of integrating technological expertise with professional judgment, supporting the sociotechnical transformation of the accounting profession envisioned by STS. This finding reinforces that successful digital transformation depends on the balanced development of both technological capabilities and human competencies.

Future Opportunities and Implications of AI in Accounting

The reviewed literature suggests that Artificial Intelligence (AI) offers substantial opportunities for the future development of accounting practices and the accounting profession. AI technologies are increasingly embedded in accounting systems to support real-time financial reporting, predictive analytics, intelligent auditing, fraud detection, and strategic decision-making (Abbas, 2026; Peng et al., 2023). As organizations accelerate digital

transformation, AI is expected to become a fundamental component of modern Accounting Information Systems (AIS), enabling more efficient, accurate, and data-driven financial management.

From the perspective of Sociotechnical Systems Theory (STS), these opportunities extend beyond technological innovation alone. While AI represents the technical subsystem that enhances automation and analytical capabilities, its long-term value depends on the social subsystem, including accountants' competencies, organizational governance, and adaptive work practices (Trist & Bamforth, 1951; Bostrom & Heinen, 1977). This interaction suggests that sustainable AI adoption requires organizations to balance technological advancement with organizational readiness and human expertise.

The literature further indicates that AI will increasingly reposition accountants as strategic business advisors rather than routine transaction processors. By supporting predictive analytics, risk assessment, and business intelligence, AI enables accountants to contribute more actively to organizational planning, performance management, and innovation (Makwana, 2025; Abbas, 2026; Fauzi, 2026). Moreover, the integration of AI with technologies such as blockchain and big data analytics strengthens financial transparency, accountability, and organizational sustainability, supporting broader digital transformation initiatives, including Industry 5.0.

Nevertheless, realizing these future opportunities requires organizations to address several strategic challenges. The literature consistently highlights the importance of ethical governance, cybersecurity, regulatory readiness, and continuous competency development to ensure responsible AI implementation. Educational institutions, professional accounting organizations, and employers therefore play complementary roles in preparing accountants to adapt to rapidly evolving technological environments while maintaining professional judgment and ethical responsibility.

Overall, the reviewed studies indicate that AI should be viewed not as a replacement for accountants but as an enabler of professional transformation and organizational innovation. Consistent with Sociotechnical Systems Theory, the future success of AI-driven accounting depends on achieving alignment between intelligent technologies and human capabilities, allowing

organizations to realize the full benefits of digital transformation while preserving ethical, strategic, and professional values.

Integrated Discussion

The findings of this Systematic Literature Review demonstrate that the six identified themes represent an integrated process of AI-driven transformation in accounting rather than separate research topics. Consistent with Sociotechnical Systems Theory (STS), the reviewed studies indicate that organizational transformation emerges through the interaction between technological innovation and human adaptation rather than technology alone (Trist & Bamforth, 1951; Bostrom & Heinen, 1977). AI technologies—including Machine Learning, Robotic Process Automation, Natural Language Processing, and predictive analytics—enhance accounting efficiency by automating routine processes, improving financial reporting, strengthening audit quality, and supporting faster organizational decision-making. These technological improvements subsequently trigger broader changes in professional roles, organizational structures, and accounting practices.

The literature further demonstrates that increased automation shifts accountants' responsibilities from routine transaction processing toward analytical, advisory, and strategic decision-support functions. This professional transformation simultaneously increases the demand for digital competencies, AI literacy, data analytics, and continuous professional development. Consequently, successful AI implementation depends not only on technological infrastructure but also on educational institutions, professional accounting organizations, and companies collaborating to develop the competencies required for accountants to work effectively alongside intelligent systems.

The reviewed studies also reveal that AI-driven transformation introduces significant ethical and governance challenges. Issues related to algorithmic bias, transparency, accountability, cybersecurity, and data privacy remain critical concerns because they directly influence the reliability of financial reporting and organizational decision-making. These findings suggest that technological advancement alone is insufficient to achieve sustainable AI adoption. Instead, organizations must complement AI implementation with effective governance mechanisms, ethical guidelines,

regulatory frameworks, and internal control systems to ensure responsible and trustworthy use of intelligent technologies.

Overall, this integrated synthesis extends the application of Sociotechnical Systems Theory within the accounting context by demonstrating that sustainable AI adoption depends on achieving alignment between technological capabilities and social adaptation. The transformation of accounting is therefore not merely a technological phenomenon but a sociotechnical process involving the interaction among intelligent technologies, accountants' competencies, organizational governance, accounting education, and continuous learning. This integrated perspective constitutes the principal theoretical contribution of the present study and provides a comprehensive conceptual foundation for future research on AI-driven transformation in accounting.

Critical Synthesis of Previous Studies

The synthesis of the reviewed literature reveals both consensus and divergence regarding the role of Artificial Intelligence (AI) in accounting. A broad consensus exists that AI improves operational efficiency by automating repetitive accounting tasks, enhancing financial reporting accuracy, strengthening audit quality, and supporting faster organizational decision-making (Akinadewo et al., 2024; Al Fatya & Susilowati, 2025; Gomaa, 2026; Olayemi et al., 2025). These findings demonstrate that AI has evolved from a supporting technology into an integral component of modern Accounting Information Systems.

Despite this agreement, previous studies differ in their interpretation of AI's broader impact on the accounting profession. Some studies primarily emphasize operational improvements and technological efficiency, whereas others argue that AI fundamentally reshapes accountants' professional roles by expanding their responsibilities toward strategic advisory, business analytics, governance, and decision support (Abbas, 2026; Bako & Tanko, 2022; Fauzi, 2026). Similarly, the literature presents contrasting perspectives on ethical issues. While several studies identify algorithmic bias, data privacy, cybersecurity, and transparency as major barriers to AI adoption (Fülöp et al., 2023; Lehner et al., 2022; Schweitzer, 2024), others suggest that these risks can be effectively mitigated through robust governance mechanisms, regulatory frameworks, and responsible AI implementation (Peng et al., 2023). These

contrasting findings indicate that the outcomes of AI adoption are influenced not only by technological capabilities but also by organizational readiness and governance quality.

The review also highlights an important shift in research trends. Earlier studies predominantly focused on automation and Accounting Information Systems, whereas more recent research increasingly addresses digital competencies, accounting education, ethical governance, sustainability, and the emergence of generative AI. This evolution reflects the growing recognition that AI adoption is no longer solely a technological issue but also an organizational, educational, and professional transformation requiring multidisciplinary perspectives.

Accordingly, this study extends previous literature by integrating six interconnected themes into a single analytical framework grounded in Sociotechnical Systems Theory. Rather than examining automation, professional transformation, ethical governance, digital competencies, and future opportunities as separate phenomena, this review demonstrates that these dimensions collectively explain AI-driven transformation in accounting. This integrated synthesis represents the principal theoretical contribution of the study and provides a comprehensive conceptual foundation for future empirical research on Artificial Intelligence in accounting.

Conceptual Framework of AI-Driven Accounting Transformation

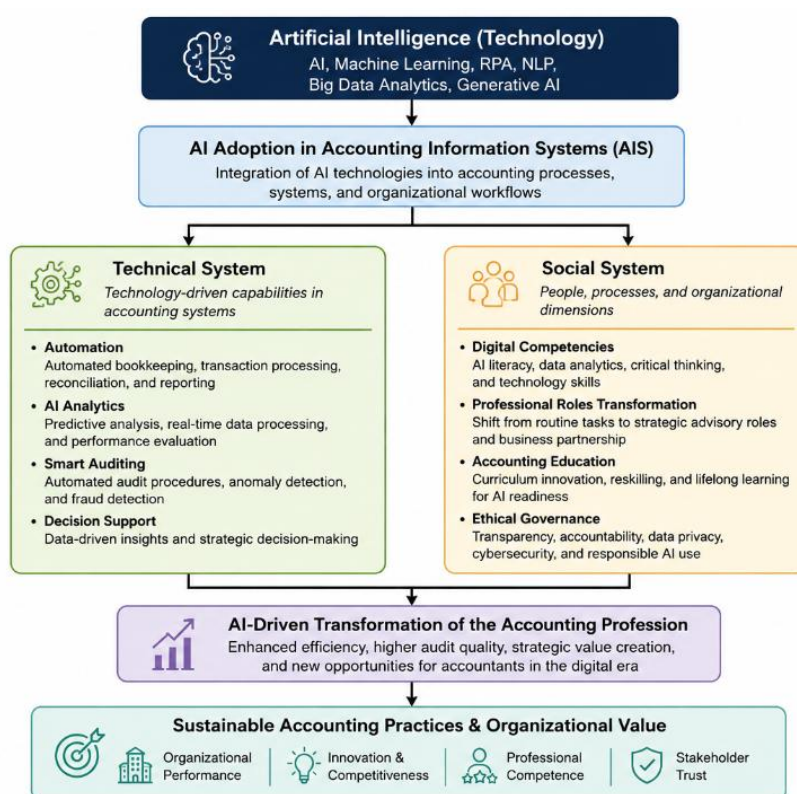
Based on the integrated findings, this study proposes a conceptual framework explaining how Artificial Intelligence (AI) transforms accounting practices and the accounting profession. The framework suggests that AI adoption initially improves accounting efficiency by automating transaction processing, financial reporting, auditing, and decision-making. These technological advancements subsequently reshape accountants' roles from routine operational tasks toward more analytical, advisory, and strategic responsibilities.

The framework further illustrates that this professional transformation increases the demand for digital competencies, including AI literacy, data analytics, and critical thinking, while simultaneously creating ethical and governance challenges related to privacy, transparency, cybersecurity, and accountability. These dimensions are interconnected, indicating that

technological advancement alone is insufficient to ensure successful AI implementation. Instead, organizations must simultaneously strengthen human competencies, organizational readiness, and governance mechanisms to maximize the benefits of AI adoption.

Grounded in Sociotechnical Systems Theory, the framework emphasizes that sustainable AI adoption depends on the alignment between technological innovation, human competencies, and ethical governance. Rather than replacing accountants, AI complements professional judgment by supporting organizational adaptation, continuous learning, and more informed strategic decision-making. Accordingly, the proposed framework provides an integrated conceptual foundation for future empirical research on AI-driven transformation in accounting and offers practical guidance for organizations implementing AI-enabled accounting systems.

Figure 2. Proposed Conceptual Framework of AI-Driven Accounting Transformation



4. Conclusion

This Systematic Literature Review demonstrates that Artificial Intelligence (AI) has fundamentally transformed accounting practices and the accounting profession. The reviewed studies consistently show that AI improves accounting efficiency through automation, enhances audit quality, supports real-time financial reporting, and strengthens organizational decision-making. Beyond operational improvements, AI shifts accountants' roles from routine transactional activities toward analytical, advisory, and strategic responsibilities. At the same time, AI adoption introduces challenges related to ethical governance, cybersecurity, algorithmic bias, transparency, accountability, and workforce transformation. These findings suggest that successful AI adoption depends not only on technological advancement but also on human competencies, ethical governance, and continuous professional development.

This study contributes to the literature by extending Accounting Information Systems research beyond operational automation toward a broader understanding of AI-driven organizational and professional transformation. Unlike previous reviews that focused on specific technological applications, this study integrates six interconnected themes into a unified conceptual framework grounded in Sociotechnical Systems Theory. The findings demonstrate that AI-driven transformation is a sociotechnical process in which technological innovation, organizational adaptation, professional competencies, ethical governance, and lifelong learning collectively shape the future of the accounting profession.

The findings also provide practical implications for multiple stakeholders. Accounting professionals should strengthen AI literacy, analytical capabilities, and ethical decision-making skills to collaborate effectively with intelligent systems. Universities and professional accounting organizations should integrate AI, data analytics, and digital accounting into curricula and continuing professional education. In addition, policymakers and standard-setting bodies should establish governance frameworks and ethical guidelines that promote responsible, transparent, and accountable AI implementation in accounting practice.

This study has several limitations. The review focuses on publications published between 2022 and 2026 and emphasizes high-quality peer-reviewed studies that met the predefined selection criteria. Consequently, relevant studies

outside this scope may not have been included. Future research should conduct empirical investigations across different organizational and national contexts, examine the effects of AI on audit quality, financial reporting, organizational performance, and accountants' competencies, and explore emerging topics such as Generative AI, explainable AI, human-AI collaboration, and AI governance in accounting.

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